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EXAMINER	
KENNEDY, ADRIAN L	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,163	TAN ET AL.	
	Examiner	Art Unit	
	Adrian L. Kennedy	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 April 2005* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/20/05 and 2/08/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Examiner's Detailed Office Action

1. This Office Action is responsive to application **10/532,163**, filed **April 20, 2005**.

2. **Claims 1-38** have been examined.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The examiner takes the position that the "obtaining [of a] user specification" is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The examiner has found no support for the applicant's claimed "user specification".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-6, 8-10, 13-18, 20-22, 25-32 and 34-36 rejected under 35 U.S.C. 103(a) as being unpatentable over He et al. (Machine Learning Methods for Chinese Web Page Categorization) in view of Kanaegami et al. (USPN 5,297,039).

Regarding claims 1, 13 and 25:

He et al. teaches,

A method for discovering knowledge from text documents (Page 93, Left Column, Paragraph 2; "*assigning one or multiple pr-defined category labels to free text documents*"; and Page 93, Right Column, Paragraph 1; "*learning categorization knowledge from real-life web documents*"), the method comprising the steps of:

extracting from text documents semi-structured meta-data (Page 94, Left Column, Paragraph 5; "*keyword extraction*"), wherein the semi-structured meta-data includes a plurality of entities and a plurality of relations between the entities (Page 94, Left Column, Paragraph 3; "*64,000 words in 1,006 classes*"; The examiner takes the position that the "words" taught in the invention of He et al., are equivalent to the key entities in the applicant's claimed invention. Additionally, the examiner takes the position that in teaching the "words" being in "classes", He et al. anticipates the "relations" of applicant's claimed invention.); identifying (Page 93, Right Column, Paragraph 1; "*learning categorization knowledge*") from the semi-structured meta-data a plurality of key entities and a corresponding plurality of key relations (Page 94, Left Column, Paragraph 3;

"*64,000 words in 1,006 classes*"; The examiner takes the position that the "words" taught in the invention of He et al., are equivalent to the key entities in the applicant's claimed invention. Additionally, the examiner takes the position that in teaching the "words" being in "classes", He et al. anticipates the "relations" of applicant's claimed invention.);

deriving from a domain knowledge base (Page 93, Right Column, Paragraph 1; "*domain knowledge derived from the category description*") a plurality of attributes relating to each of the plurality of entities relating to one of the plurality of key entities for forming a plurality of pairs of key entity and a plurality of attributes related thereto (Page 96, Left Column, Paragraph 1; "*ARAM formulates recognition categories of input patterns, and associates each category with its respective prediction*" and """);

formulating a plurality of patterns, each of the plurality of patterns relating to one of the plurality of pairs of key entity and a plurality of attributes related thereto;

analyzing the plurality of patterns using an associative discoverer (Page 93, Left Column, Paragraph 1; "*Adaptive Resonance Associative Map*"; The examiner takes the position that the associative map of He et al. anticipates the applicant's claimed associative discoverer. This position this is supported by the applicant teaching in Paragraph 0045, that the "associative discover may embody a statistical method, a symbolical machine-learning algorithm, or a neural network model" and that the "neural network model may comprise, for example, an Adaptive Resonance Theory Map".); and

interpreting the output of the associative discoverer for discovering knowledge (Page 96, Left Column, Paragraph 2; "*knowledge that ARAM discovers during learning*"; The examiner takes the position that "interpreting", as claimed by the applicant, is inherent in the process of learning and knowledge discovery in He et al.).

Regarding claims 13-24, the examiner takes the position that in teaching the use of his invention for processing input text data, He et al. anticipates the use of program code which facilitates the execution of his method. Additionally, in teaching the downloading of the text data from web pages on Page 93, Right Column, Paragraph 1, He et al. anticipates the program code being computer readable.

Regarding claims 25-38, the examiner takes the position that in teaching methods which perform the functions of the applicant's claimed means, He et al. anticipates the applicant's claimed means.

He et al. does not teach the use of "pairs of key entities" and a "plurality of attributes attributed thereto.

However, Kanaegami et al. teaches,

The use of pairs of key entities, and a plurality of attributes attributed thereto (Column 13, Lines 3-6; "*a triplet of the relation, element 1, and element 2*"; The examiner takes the position that the elements of the triplet anticipate the applicant's claimed "pairs of entities", and that the "attributes", as claimed by the applicant, are anticipated by the relation in the invention of Kanaegami et al.).

It would have been obvious to one skilled in the art at the time of invention to combine the invention of He et al. with the invention of Kanaegami et al. for the purpose of text "*information extraction*" Column 2, Lines 6-11.

Regarding claims 2, 14 and 28:

He et al. teaches,

The method wherein the step of extracting from text documents comprises the step of extracting text content from documents containing at least one type of text, image, audio, and video information (Page 94, Left Column, Paragraph 94; "*a pre-requisite of text categorization is to extract a suitable feature representation of the documents*").

Regarding claims 3, 15 and 29:

Kanaegami et al. teaches,

The method wherein the step of identifying the plurality of key entities comprises the step of selecting the plurality of key entities according to at least one of frequency of appearance of the plurality of key entities in the semi-structured meta-data (Column 5, Lines 3-7; "*search means for search [...] for occurrence of said sets of keywords and relations*"; and Lines 23-27; "*text search system according to this invention comprises [...] keyword means for extracting keywords*"; The examiner takes the position that the "identifying", as claimed by the applicant, is anticipated by the searching in the invention of Kanaegami et al. Additionally, the examiner takes the position that the "selecting" as claimed by the applicant, is anticipated by the keyword extracting taught in the invention

of Kanaegami et al.) and obtaining user specification.

Regarding claims 4, 16 and 30:

Kanaegami et al. teaches,

The method wherein the step of identifying the plurality of key relations comprises the step of selecting the plurality of key relations according to at least one of frequency of appearance of the plurality of key relations in the semi-structured meta-data (Column 5, Lines 3-7; "*search means for search [...] for occurrence of said sets of keywords and relations*"; and Lines 23-27; "*text search system according to this invention comprises [...] keyword means for extracting keywords*"; The examiner takes the position that the "identifying", as claimed by the applicant, is anticipated by the searching in the invention of Kanaegami et al. Additionally, the examiner takes the position that the "selecting" as claimed by the applicant, is anticipated by the keyword extracting taught in the invention of Kanaegami et al.) and obtaining user specification.

Regarding claim 5, 17 and 31:

He et al. teaches,

The method wherein the step of deriving from the domain knowledge base comprises the step of deriving from a domain knowledge base relating to at least one of taxonomy (Page 94, Left Column, Paragraph 2; "*lexicon*"; The examiner takes the position that a lexicon is anticipate the applicant's claimed taxonomy.), a concept hierarchy network,

ontology, a thesaurus, a relational database, and an object-oriented database.

Regarding claim 6, 18 and 32:

Kanaegami et al. teaches,

The method wherein the step of deriving the plurality of attribute comprises the step of deriving a set of attributes or lower level entities characterizing the plurality of entities relating to the plurality of key entities (Column 12, Lines 22-23; "*the analysis network is subjected to syntactical analysis*"; and Lines 35-38; "*syntactical analysis selects further the verbs positioned after respective nouns*"; The examiner takes the position that the parts of speech identified in said analysis networks during syntactical analysis, are attributes and/or lower level entities that characterize the analysis networks taught in the invention of Kanaegami et al.).

Regarding claim 8, 20, 34:

He et al. teaches,

The method wherein the step of analyzing the plurality of patterns using the associative discoverer comprises the step of analyzing the plurality of patterns using at least one of a neural network (Page 95, Right Column, Paragraph 3; "*Adaptive resonance Associative Map (ARAM) is a class of predictive neural networks that performs incremental supervised learning of recognition categories (pattern classes) and multidimensional maps of patterns*"), a statistical system, and a symbolic machine learning system.

Regarding claim 9, 21 and 35:

He et al. teaches,

> The method wherein the step of analyzing the plurality of patterns comprises the step of analyzing the plurality of patterns using an Adaptive Resonance Associative Map (Page 95, Right Column, Paragraph 3; "*Adaptive resonance Associative Map (ARAM)*").

Regarding claim 10 and 22:

He et al. teaches,

> The method wherein the step of interpreting the output of the associative discoverer for discovering knowledge comprises the step of discovering the relations between the plurality of attributes and the plurality of key entities (Page 95, Right Column, Paragraph 3; "*Adaptive resonance Associative Map (ARAM) is a class of predictive neural networks that performs incremental supervised learning of recognition categories (pattern classes) and multidimensional maps of patterns*"; The examiner takes the position that the "discovering [of] the relations" is inherent in the process of category recognition amongst patterns).

Regarding claim 26:

He et al. teaches,

> The system wherein the semi-structured meta-data comprises definition of entities and relations among the entities (Page 94, Left Column, Paragraph 3; "*the lexicon used by the segmentation model contains 64,000 words in 1,006 classes*"; The examiner takes the

position that the "words" taught in the invention of He et al., are equivalent to the key entities in the applicant's claimed invention. Additionally, the examiner takes the position that in teaching the "words" being in "classes", He et al. anticipates the "relations among the entities" of applicant's claimed invention.).

Regarding claim 27:

He et al. teaches,

The system wherein the semi-structured meta-data is stored in a permanent or temporary storage (Page 94, Left Column, Paragraph 3; "*the lexicon used by the segmentation model contains 64,000 words in 1,006 classes*"; The examiner takes the position that in teaching that the lexicon "contains" words, it is inherent that the words are stored in the lexicon, and that the lexicon is stored in some form that that can be accessed by segmentation model.).

Regarding claim 36:

He et al. teaches,

The system according to claim 25 wherein the knowledge comprises hidden key relations between the attributes of the entities and the key entities (Page 94, Left Column, Paragraph 3; "*the lexicon used by the segmentation model contains 64,000 words in 1,006 classes*"; The examiner takes the position that the "words" taught in the invention of He et al., are equivalent to the key entities in the applicant's claimed invention. Additionally, the examiner takes the position that in teaching the "words" being in

"classes", He et al. anticipates the "relations among the entities" of applicant's claimed invention. Finally, in broadly teaching relation between entities, He et al anticipates the specific claiming of "hidden relations".).

8. Claims 7, 19 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over He et al. (Machine Learning Methods for Chinese Web Page Categorization) in view of Kanaegami et al. (USPN 5,297,039) and further in view of Tan (Predictive Self-Organizing Networks for Text Categorization).

Regarding claim 7, 19 and 33:

He et al. in combination with Kanaegami et al. teaches the method of claims 1, 13 and 25, but does not teach the use of "concatenated vector representation of the plurality of attributes".

However, Tan does teach,

The use concatenated vector representations of the plurality of attributes (Page 69, Equation 6; The examiner take the position that equation 6 anticipates that applicant's claimed "concatenated vector representation". This position is supported by the equation of Tan being substantially similar to the equation 1 taught in Paragraph 0064 of applicant's disclosure.) and the plurality of key entities relating to the corresponding plurality of key relations.

It would have been obvious to one skilled in the art at the time of invention to combine the invention of He et al. with the invention of Tan for the purpose of the classification of text documents (Page 66, Paragraph 1; "*classification of free-text documents*").

9. Claims 11, 12, 23, 24, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over He et al. (Machine Learning Methods for Chinese Web Page Categorization) in view of Kanaegami et al. (USPN 5,297,039) and further in view of Tan et al. (Learning User Profiles for Personalized Information Dissemination).

Regarding claims 11, 23 and 37:

He et al. in combination with Kanaegami et al. teaches the method of claims 1, 13 and 25, but does not teach the use of a "user interface for displaying".

Tan et al. teaches,

The method further comprising the step of using a user interface for displaying the semi-structured meta-data, the plurality of key entities, the plurality of key relations, the plurality of attributes, and the knowledge discovered (Page 187 Left Column, Paragraph 5; "*the news browser gives users full control to hop across available news categories to select news of the choices*"; The examiner takes the position that in teaching the displaying of news from categories, Tan et al. anticipates the applicant's claimed "user interface for displaying").

It would have been obvious to one skilled in the art at the time of invention to combine the invention of He et al. with the invention of Tan et al. for the purpose of text feature

extraction (Page 186, Right Column, Paragraph 2; "*the text documents downloaded by the retrieval agent are subsequently parsed for feature extraction*").

Regarding claims 12, 24 and 38:

He et al. in combination with Kanaegami et al. teaches the method of claim 1, but does not teach the use of a "user interface for obtaining user instruction".

Tan et al. teaches,

The method further comprising the step of using a user interface for obtaining user instruction for the plurality of key entities and the plurality of key relations (Page 187 Left Column, Paragraph 5; "*the news browser gives users full control to hop across available news categories to select news of the choices*"; The examiner takes the position that in teaching the selection of news from categories, Tan et al. anticipates the applicant's claimed "user interface for obtaining user instruction").

It would have been obvious to one skilled in the art at the time of invention to combine the invention of He et al. with the invention of Tan et al. for the purpose of text feature extraction (Page 186, Right Column, Paragraph 2; "*the text documents downloaded by the retrieval agent are subsequently parsed for feature extraction*").

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tan is cited for his predictive self-organizing networks for text categorization. Rajaraman et al.

is cited for his method of topic detection, tracking and trend analysis using self-organizing neural networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrian L. Kennedy whose telephone number is (571) 270-1505. The examiner can normally be reached on Mon -Fri 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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